Bull Trout Final Critical Habitat Justification: Rationale for Why Habitat is Essential, and Documentation of Occupancy

Chapter 30. Columbia Headwaters Recovery Unit—Kootenai River Basin Critical Habitat Unit

Chapter 30. Kootenai River Basin Critical Habitat Unit

The Kootenai River Basin CHU is essential for maintaining bull trout distribution within this unique geographic region of the Columbia Headwaters RU. This CHU is a uniquely configured transboundary watershed, flowing in a horseshoe pattern that both originates (eastern or upstream arm) and ends (at Kootenay Lake) in British Columbia. This CHU is essential to bull trout recovery because it contains the strongest adfluvial core area population across the range of the species (10,000 + adults in Lake Koocanusa) and also supports the single largest spawning run of adult bull trout (3,000–5,000 adults annually) in the Wigwam River, British Columbia. These high population levels produce a harvestable surplus, allowing closely regulated angler utilization in Lake Koocanusa and provide numerous opportunities for research and evaluation of a high-density (i.e., recovered) bull trout population. The core area populations (Lake Koocanusa, Kootenai River, Bull Lake) represent working models for creating and sustaining bull trout recovery opportunities in other heavily managed watersheds (see Appendix 1 for more detailed information).

The Kootenai River Basin CHU is located in the northwestern corner of Montana and the northeastern tip of the Idaho panhandle and includes the Kootenai River watershed upstream and downstream of Libby Dam. The Kootenai River flows in a unique horseshoe configuration, entering the United States from British Columbia, Canada, and then traversing across northwest Montana and the northern Idaho panhandle before returning to British Columbia from Idaho where it eventually joins the upper Columbia River drainage. The Kootenai River Basin CHU includes two CHSUs: the downstream Kootenai River CHSU in Boundary County, Idaho, and Lincoln County, Montana, and the upstream Lake Koocanusa CHSU in Lincoln County, Montana. The entire Kootenai River Basin CHU includes 522.5 km (324.7 mi) of streams and 12,089.2 ha (29,873.1 ac) of lake and reservoir surface area designated as critical habitat.

30.1. Kootenai River Critical Habitat Subunit

Located in Boundary and Bonner Counties in Idaho and Lincoln County in Montana, the Kootenai River CHSU includes the downstream portion of the Kootenai River drainage up to Libby Dam. A total of 526.1 km (326.9 mi) of streams and 470.3 ha (1,162.3 ac) of Bull Lake surface area is designated as bull trout critical habitat.

The following water bodies are included in this CHSU (see Table 83):

(A) The Kootenai River from the Canadian border with Idaho upstream 184.2 km (114.4 mi) to Libby Dam provides FMO habitat.

(B) Long Canyon Creek from its confluence with the Kootenai River upstream 24.0 km (15.0 mi) provides spawning and rearing habitat.

(C) Trout Creek from its confluence with the Kootenai River upstream 1.4 km (0.8 mi) provides FMO habitat.

(D) Ball Creek from its confluence with the Kootenai River upstream 1.4 km (0.8 mi) provides FMO habitat.

(E) Myrtle Creek from its confluence with the Kootenai River upstream 5.1 km (3.1 mi) provides FMO habitat.

(F) Deep Creek from its confluence with the Kootenai River upstream 6.9 km (4.3 mi); Caribou Creek from its confluence with the Deep Creek upstream 0.8 km (0.5 mi); and Snow Creek from its confluence with Caribou Creek upstream 0.5 km (0.3 mi) provide FMO habitat.

(G) Moyie River from its confluence with the Kootenai River upstream 2.5 km (1.6 mi) provides FMO habitat.

(H) Boulder Creek from its confluence with the Kootenai River upstream 2.1 km (1.3 mi) provides spawning and rearing habitat.

(I) Callahan Creek from its confluence with the Kootenai River upstream 12.3 km (7.7 mi) to the confluence with North Fork and South Fork Callahan Creeks; North Fork, Callahan Creek from the confluence with Callahan Creek 17.2 km (10.7 mi) to the headwaters; and South Fork, Callahan Creek from the confluence with Callahan Creek 15.5 km (9.7 mi) to the headwaters provide spawning and rearing habitat.

(J) O'Brien Creek from its confluence with the Kootenai River upstream 44.3 km (27.5 mi) to its headwaters provides spawning and rearing habitat.

(K) Quartz Creek from its confluence with the Kootenai River upstream 17.7 km (11.0 mi) to its headwaters and its tributary, West Fork Quartz Creek, from its confluence with Quartz Creek upstream 10.0 km (6.2 mi) to its headwaters provides spawning and rearing habitat.

(L) Pipe Creek from its confluence with the Kootenai River upstream 31.9 km (19.8 mi) to the confluence of its East Fork, and East Fork Pipe Creek from its confluence upstream 13.6 km (8.4 mi) to its headwaters provide spawning and rearing habitat.

(M) The mainstem of Libby Creek upstream 39.1 km (24.3 mi) from its confluence with the Kootenai River to its upper reaches provides FMO habitat for migratory bull trout. The uppermost reach of Libby Creek, roughly upstream 5.7 km (3.6 mi) from the confluence of Howard Creek provides spawning and rearing habitat. Bear Creek, from its confluence with Libby Creek upstream 13.2 km (8.2 mi) to its headwaters also provides spawning and rearing habitat.

(N) Fisher River from its confluence with the Kootenai River upstream 47.2 km (29.4 mi) to the confluence of West Fisher Creek provides FMO habitat. West Fisher Creek from its confluence with the Fisher River upstream 17.9 km (11.1 mi) to its headwaters provides spawning and rearing habitat.

(O) Bull Lake, its associated tributaries, and downstream portions of Lake Creek contain a separate bull trout core area population that is completely isolated from two-way migratory connection with the Kootenai River by Troy Dam. This population is unusual in that the adult spawners that use Bull Lake as FMO habitat run downstream from Bull Lake to spawn, using Lake Creek as a downstream corridor to access spawning areas in Keeler Creek. Bull Lake (506.0 ha (1,296.0 ac)) and 13.0 km (8.1 mi) of Lake Creek to the confluence of Keeler Creek provide FMO habitat. Keeler Creek from its confluence with Lake Creek upstream 9.9 km (6.1 mi) and its tributaries North Fork Keeler Creek from its confluence with Keeler Creek upstream 3.7 km (2.3 mi) and South Fork Keeler Creek from its confluence with Keeler Creek upstream 1.6 km (1.0 mi) provide spawning and rearing habitat.

Table 83. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Kootenai River Basin–Kootenai River CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Kootenai River Basin–Kootenai River	Ball Creek	ID	Documented bull trout during surveys (Gidleyin litt. 2009).	Rationale provided in Kootenai River CHSU justification text	1164095 487873
Kootenai River Basin–Kootenai River	Bear Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	3-36 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b).	1153025 481103
Kootenai River Basin–Kootenai River	Boulder Creek	ID	Occupied based on annual spawning surveys (Hardy et al. 2008).	Rationale provided in Kootenai River CHSU justification text	1160515 486249
Kootenai River Basin–Kootenai River	Bull Lake	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Leary et al. (2008), KTOI and MFWP (2004).	Identified as a core area (Service 2002a).	1158524 482470
Kootenai River Basin–Kootenai River	Callahan Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Migratory corridor connecting Kootenai River to a local population designated in the draft Bull Trout Recovery Plan (Service 2002a).	1155256 482732
Kootenai River Basin–Kootenai River	Callahan Creek, N Fk	ID	Occupied based on annual spawning surveys (Hardy et al. 2008).	Rationale provided in Kootenai River CHSU justification text	1160043 482606
Kootenai River Basin–Kootenai River	Callahan Creek, S Fk	ID	Occupied based on annual spawning surveys (Hardy et al. 2008).	Rationale provided in Kootenai River CHSU justification text	1160043 482605
Kootenai River Basin–Kootenai River	Caribou Creek	ID	Bull trout documented during surveys (Baconrind in litt. 2009;Paragamian pers. comm. 2009).	Rationale provided in Kootenai River CHSU justification text	1163988 486638
Kootenai River Basin–Kootenai River	Deep Creek	ID	Migratory corridor for bull trout observed upstream (C. Baconrind in litt.. 2009; V. Paragamian pers. comm. 2009).	Rationale provided in Kootenai River CHSU justification text	1163833 487079
Kootenai River Basin–Kootenai River	East Fork Pipe Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1153706 483656
Kootenai River Basin–Kootenai River	Fisher River	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Migratory corridor connecting Kootenai River to a local population designated in the draft Bull Trout Recovery Plan (Service 2002a).	1151925 482158

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Kootenai River Basin–Kootenai River	Keeler Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Leary et al. (2008), KTOI and MFWP (2004).	8-125 bull trout redds per year in 10 counts conducted over 1999-2008, including South Fork Keeler (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1155102 482134
Kootenai River Basin–Kootenai River	Kootenai R	ID	Documented bull trout during telemetry studies (Walters 2002; Partridge 2003).	Rationale provided in Kootenai River CHSU justification text	1165027 489999.1
Kootenai River Basin–Kootenai River	Kootenai River	MT	Documented bull trout during telemetry studies (Walters 2002; Partridge 2003).	Rationale provided in Kootenai River CHSU justification text	1165027 489999.2
Kootenai River Basin–Kootenai River	Kootenai River	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Sylvester et al. (2008), KTOI and MFWP (2004).	Migratory corridor connecting Kootenai River to local populations designated in the draft Bull Trout Recovery Plan (Service 2002a).	1165027 489999
Kootenai River Basin–Kootenai River	Kootenai River	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Hensler and Benson (2008), Sylvester et al. (2008), KTOI and MFWP (2004).	Migratory corridor connecting Kootenai River to local populations designated in the draft Bull Trout Recovery Plan (Service 2002a).	1165027 489999
Kootenai River Basin–Kootenai River	Lake Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Migratory corridor connecting Bull Lake to Keeler Creek local populations designated in the draft Bull Trout Recovery Plan (Service 2002a).	1155237 482706
Kootenai River Basin–Kootenai River	Libby Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Migratory corridor connecting Kootenai River to a local population designated in the draft Bull Trout Recovery Plan (Service 2002a).	1153213 482331.1
Kootenai River Basin–Kootenai River	Libby Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1153213 482331.2
Kootenai River Basin–Kootenai River	Long Canyon Creek	ID	Documented bull trout during surveys in the lower reaches (Gidleyin litt. 2009; Partridge 2003).	Rationale provided in Kootenai River CHSU justification text	1165264 489614.1
Kootenai River Basin–Kootenai River	Long Canyon Creek	ID	Documented bull trout during surveys (Gidley in litt. 2009; Partridge 2003).	Rationale provided in Kootenai River CHSU justification text	1165264 489614.2
Kootenai River Basin–Kootenai River	Moyie River	ID	Documented bull trout during telemetry studies (Walters 2002).	Rationale provided in Kootenai River CHSU justification text	1161862 487149
Kootenai River Basin–Kootenai River	Myrtle Creek	ID	Documented bull trout during surveys (Gidley in litt. 2009; V. Paragamian pers. comm. 2009).	Rationale provided in Kootenai River CHSU justification text	1164107 487395

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Kootenai River Basin–Kootenai River	North Callahan Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	0-30 bull trout redds per year in 6 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1160043 482606
Kootenai River Basin–Kootenai River	North Fork Keeler Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	4-82 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1155345 482032
Kootenai River Basin–Kootenai River	O'Brien Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Leary et al. (2008), KTOI and MFWP (2004).	34-79 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1155157 482654
Kootenai River Basin–Kootenai River	Pipe Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Leary et al. (2008), KTOI and MFWP (2004).	0-36 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1153619 482524
Kootenai River Basin–Kootenai River	Quartz Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	8-52 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1153814 482617
Kootenai River Basin–Kootenai River	Snow Creek	ID	Bull trout documented during surveys (Baconrindin litt.. 2009; V. Paragamian pers. comm. 2009).	Rationale provided in Kootenai River CHSU justification text	1164021 486637
Kootenai River Basin–Kootenai River	South Callahan Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	1-10 bull trout redds per year in 6 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1160043 482605
Kootenai River Basin–Kootenai River	South Fork Keeler Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008).	0-43 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b).	1155421 482010
Kootenai River Basin–Kootenai River	Trout Creek	ID	Bull trout documented during surveys (Baconrindin litt. 2009; Gidley in litt. 2009).	Rationale provided in Kootenai River CHSU justification text	1164103 488395
Kootenai River Basin–Kootenai River	West Fisher Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), Leary et al. (2008), KTOI and MFWP (2004).	1-27 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1152227 480410

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Kootenai River Basin–Kootenai River	West Fork Quartz Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	10-109 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1153912 482844

30.2. Lake Koocanusa Critical Habitat Subunit

The Lake Koocanusa CHSU is essential to bull trout conservation because it is amongst the most secure and stable bull trout refugium across the range of the species and may provide a very important stronghold against potential extinction. The adfluvial population that is the sole life history form present in the CHSU originated from fluvial stocks in the Kootenai River trapped upstream of Libby Dam, which successfully adapted to the newly expanded habitat and have provided a strong and resilient core area population. There are low numbers of nonnative fish in this CHSU and most of the spawning and rearing habitat is in British Columbia. The most important spawning stream, the Wigwam River, supports 1,500–2,500 bull trout redds annually. The strong bull trout population has provided an opportunity to allow anglers to utilize the bull trout resource, harvesting a closely regulated number of fish despite ESA listing. Conservation of this bull trout CHSU in the United States provides our Canadian counterparts with strong incentive for continued cooperation in broader bull trout recovery efforts (see Appendix 1 for more detailed information).

Naturally fluvial migratory populations of bull trout that historically existed in the upper Kootenai River watershed in Montana and British Columbia converted to an adfluvial life history pattern with the construction of Libby Dam in 1973. Libby Dam backs up water some 144.8 km (90 mi), with the upper 65.5 km (40.7 mi) portion at full pool in British Columbia, Canada. Bull trout adults living in Lake Koocanusa spawn primarily in Canada. This CHSU is located entirely in Lincoln County, Montana. Approximately 62.5 km (38.8 mi) of streams and 18,818.0 ha (46,500.2 ac) of reservoir surface area are designated as critical habitat. The following water bodies are included in this CHSU (see Table 84):

(A) Lake Koocanusa (18,818.0 ha (46,500.2 ac)) provides FMO habitat for a large (over 10,000 adults) population of bull trout that mostly use the upper Kootenay River watershed in British Columbia for spawning and rearing. The Grave Creek population and a small portion of the Wigwam River local population spawn in the United States.

(B) The Tobacco River from its confluence with Lake Koocanusa upstream 21.7 km (13.5 mi) to Grave Creek provides migratory (FMO) habitat. Grave Creek from its confluence with the Tobacco River upstream 25.5 km (15.9 mi) to its headwaters and its tributaries, Clarence Creek upstream 6.2 km (3.9 mi) to its headwaters and the lower reaches of Blue Sky Creek upstream 2.0 km (1.3 mi), provide spawning and rearing habitat.

(C) The Wigwam River in British Columbia is one of the most heavily used spawning and rearing habitats for bull trout anywhere in the range of the species; with over 2,000 redds enumerated annually. The uppermost 7.0 km (4.4 mi) of the Wigwam River wraps back into the United States, providing a small portion of the spawning and rearing habitat. Bull trout that spawn in the Wigwam River use FMO habitat primarily in the United States in Lake Koocanusa.

Table 84. Water body segments designated as critical habitat for bull trout, including documentation of occupancy and site-specific rationale in the Kootenai River Basin–Lake Koocanusa CHU/CHSU

CHU—CHSU	Water Body Name	State	Information Documenting Bull Trout Occupancy	Essential Habitat Rationale	LLID
Kootenai River Basin–Lake Koocanusa	Blue Sky Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	0-20 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population (i.e., a portion of the Grave Creek local population) in the draft Bull Trout Recovery Plan (Service 2002a).	1144629 485342
Kootenai River Basin–Lake Koocanusa	Clarence Creek	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	9-52 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population (i.e., a portion of the Grave Creek local population) in the draft Bull Trout Recovery Plan (Service 2002a).	1144755 485321
Kootenai River Basin–Lake Koocanusa	Grave Creek	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	85-173 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b). Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1145706 484753
Kootenai River Basin–Lake Koocanusa	Tobacco River	MT	Documented in MFISH database (MFWP 2009a), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Demonstrated to be an important migratory corridor connecting local populations in grave Creek, designated in the draft Bull Trout Recovery Plan (Service 2002a), to Lake Koocanusa.	1150739 485345
Kootenai River Basin–Lake Koocanusa	Wigwam River	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	635-2,285 bull trout redds per year in 10 counts conducted over 1999-2008 (MFWP 2009b), nearly all of which are in B.C. U.S. redd counts (in the very head end of the system are 6-33 annually as part of this total. Designated as a local population in the draft Bull Trout Recovery Plan (Service 2002a).	1144756 490152
Kootenai River Basin–Lake Koocanusa	Lake Koocanusa	MT	Documented in MFISH database (MFWP 2009a), Ardren, DeHaan, and Dunnigan (2007), Dunnigan et al. (2003, 2004, 2005, 2007, 2008), KTOI and MFWP (2004).	Identified as a core area (Service 2002a).	1152435 487268